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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 23

## Complete if Known

Application Number 10/670,980  
Filing Date 09/25/2003  
First Named Inventor Sreenivasan et al.  
Group Art Unit 1722  
Examiner Name Nguyen, Thukhanh  
Attorney Docket Number P100-42-03

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
PK	B1	3,527,062		Belinski et al.	09-08-1970	
	B2	3,783,520		King	01-08-1974	
	B3	3,807,027		Heisler	04-30-1974	
	B4	3,807,029		Troeger	04-30-1974	
	B5	3,811,665		Seelig	05-21-1974	
	B6	4,062,600		Wyse	12-13-1977	
	B7	4,070,116		Frosch et al.	01-24-1978	
	B8	4,098,001		Watson	07-04-1978	
	B9	4,119,688		Hiraoka	10-10-1978	
	B10	4,155,169		Drake et al.	05-22-1979	
	B11	4,201,800		Alcorn et al.	05-06-1980	
	B12	4,202,107		Watson	05-13-1980	
	B13	4,267,212		Sakawaki	05-12-1981	
	B14	4,326,805		Feldman et al.	04-27-1982	
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	B28	4,692,205		Sachdev et al.	09-08-1987	
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Examiner Signature	PK JS				Date Considered	9/16/05

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		Application Number	10/670,980		
		Filing Date	09/25/2003		
		First Named Inventor	Sreenivasan et al.		
		Group Art Unit	1722		
		Examiner Name	Nguyen, Thukhanh		
		Attorney Docket Number	P100-42-03		
Sheet	2	of	23		

U.S. PATENT DOCUMENTS						
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P2	B35	4,772,878		Kane	09-20-1988	
	B36	4,808,511		Holmes	02-28-1989	
	B37	4,826,943		Ito et al.	05-02-1989	
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	B70	5,169,494		Hashimoto et al.	12-08-1992		
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	B72	5,173,393		Sezi et al.	12-22-1992		
	B73	5,179,863		Uchida et al.	01-19-1993		
	B74	5,198,326		Hashimoto et al.	03-30-1993		
	B75	5,204,739		Domenicali	04-20-1993		
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	B89	5,324,683		Fitch et al.	06-28-1994		
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	B100	5,392,123		Marcus et al.	02-21-1995		
	B101	5,414,514		Smith et al.	05-09-1995		
	B102	5,417,802		Obeng	05-23-1995		
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Sheet	4	of	23		

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		Number	Kind Code <sup>2</sup> (if known)			
P/L	B103	5,421,981		Leader et al.	06-06-1995	
	B104	5,422,295		CHOI et al.	06-06-1995	
	B105	5,424,549		Feldman	06-13-1995	
	B106	5,425,848		Haisma et al.	06-20-1995	
	B107	5,425,964		Southwell et al.	06-20-1995	
	B108	5,431,777		Austin	07-11-1995	
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	B114	5,480,047		Tanigawa et al.	01-02-1996	
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	B119	5,515,167		Ledger et al.	05-07-1996	
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PK	B137	5,747,102		Smith et al.	05-05-1998	
	B138	5,753,014		Van Rijn	05-19-1998	
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	B141	5,776,748		Singhvi et al.	07-07-1998	
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B191	6,218,316	B1	Marsh	04-17-2001		
B192	6,234,379	B1	Donges	05-22-2001		
B193	6,245,213	B1	Olsson et al.	06-12-2001		
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B197	6,316,290	B1	Wensel	11-13-2001		
B198	6,326,627	B1	Putvinski et al.	12-04-2001		
B199	6,329,256	B1	Ibok	12-11-2001		
B200	6,334,960	B1	Willson et al.	01-01-2002		
B201	6,337,262	B1	Pradeep et al.	01-08-2002		
B202	6,355,198	B1	Kim et al.	03-12-2002		
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B204	6,383,928	B1	Eissa	05-07-2002		
Examiner Signature	[Signature]				Date Considered	4/16/05

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				Application Number	10/670,980
				Filing Date	09/25/2003
				First Named Inventor	Sreenivasan et al.
				Group Art Unit	1722
				Examiner Name	Nguyen, Thukhanh
				Attorney Docket Number	P100-42-03
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U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
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	B209	6,391,798	B1	DeFelice et al.	05-21-2002	
	B210	6,407,340	B1	Wikstrom et al.	06-18-2002	
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	B212	6,411,010	B1	Suzuki et al.	06-25-2002	
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	B222	6,514,672	B2	Young et al.	02-04-2003	
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PK	B238	6,635,581	B2	Wong	10-21-2003	
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		Number	Kind Code <sup>2</sup> (if known)			
P	B239	6,646,662	B1	Nebashi et al.	11-11-2003	
	B240	6,677,252	B2	Marsh	01-13-2004	
	B241	6,696,157	B1	David et al.	02-24-2004	
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	B295	2004/0112861	A1	Choi et al.	06-17-2004	
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B305	2004/0168586	A1	Bailey et al.	09-02-2004		
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Sheet	10	of	23
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<b>Application Number</b>	10/670,980
<b>Filing Date</b>	09/25/2003
<b>First Named Inventor</b>	Sreenivasan et al.
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<b>Examiner Name</b>	Nguyen, Thukhanh
<b>Attorney Docket Number</b>	P100-42-03

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Sheet	11	of	23	Attorney Docket Number	P100-42-03

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		Office <sup>2</sup>	Number <sup>4</sup>	Kind Code <sup>3</sup> (if known)				
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	B347	WO	02/006902		Choi et al.	01-24-2002		
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	B351	WO	02/22916		Pettersson et al.	03-21-2002		
	B352	WO	02/24977		Bjarnason et al.	03-28-2002		
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			Application Number	10/670,980	
			Filing Date	09/25/2003	
			First Named Inventor	Sreenivasan et al.	
			Group Art Unit	1722	
			Examiner Name	Nguyen, Thukhanh	
Sheet	13	of	23	Attorney Docket Number	P100-42-03

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P/L	B358	Abstract of Japanese Patent 02-24848, January 26, 1990		
	B359	Abstract of Japanese Patent 02-92603, August 12, 2004		
	B360	Abstract of Japanese Patent 55-88332, April 14, 2004		
	B361	Abstract of Japanese Patent 57-7931, April 14, 2004		
	B362	Abstract of Japanese Patent 58-129074, August 01, 1983		
	B363	Abstract of Japanese Patent 63-138730, April 14, 2004		
	B364	ANANTHASURESH et al., "Strategies for Systematic Synthesis of Compliant Mems.", DSC-Vol. 55-2, Dynamic Systems and Control: Volume 2, pp. 677 - 686, November 1, 1994.		
	B365	ARAI et al., "Calibration and Basic Motion of Micro Hand Module.", IEEE, January 1, 1993, pp. 1660-1665.		
	B366	Arai et al., "Development of a New Parallel Manipulator with Fixed Linear Actuator.", In Proceedings of Japan/USA Symposium on Flexible Automation, January 1, 1996, Vol. 1, ASME, New York, pp. 145-149.		
	B367	"Photoresist Coating Methods.", E-mail from Susan Bagen (BAGEN@aol.com) to Dhaval Shah, September 18, 1997.		
P/L	B368	BENDER et al., "Fabrication of Nanostructures using a UV-based Imprint Technique.", Microelectronic Engineering 53, January 1, 2000, pp. 233-236.		

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PK	B369	BENDER et al., "Multiple Imprinting in UV-based Nanoimprint Lithography: Related Material Issues.", Microelectronic Engineering 61 – 62, January 1, 2002, pp. 407-413.	
	B370	BLOMQUIST et al., "Fluorinated Acrylates in making Low-Loss, Low-Birefringence, and Single-Mode Optical Waveguides with Exceptional Thermo-Optic Properties.", SPIE Conference on Linear Optical Properties of Waveguides and Fibers, July 1, 1999, Vol. 3799, pp. 266-279.	
	B371	BRAEUER et al., "Precise Polymer Micro-Optical Systems.", MRS Bulletin, July 1, 2001, pp. 519-522.	
	B372	CHOI et al., "Design of Orientation Stages for Step and Flash Imprint Lithography.", Precision Engineering, January 1, 2001, pp. 192-199.	
	B373	CHOU et al., "Imprint Lithography with 25-Nanometer Resolution." Science Vol. 272, April 5, 1996, pp. 85-87.	
	B374	CHOU et al., "Imprint Lithography with Sub-10 nm Feature Size and High Throughput.", Microelectronic Engineering 35, January 1, 1997, pp. 237-240.	
	B375	CHOU et al., "Imprint of Sub-25 nm Vias and Trenches in Polymers.", Applied Physics Letter, November 20, 1995, 67 (21)	
PK	B376	CHOU et al., "Lithographically Induced Self-assembly of Periodic Polymer Micropillar Arrays.", J. Vac. Sci. Technol., November 1, 1999, B 17(6), pp. 3197-3202.	
PK	B377	CHOU et al., "Nanoimprint Lithography and Lithographically Induced Self-Assembly.", MRS Bulletin, July 1, 2001, pp. 512-517.	
PK	B378	CHOU, "Ultrafast and Direct Imprint of Nanostructures in Silicon, Nature, Col. 417, (June 2002), pp. 835-837.	
PK	B379	COLBURN et al., "Step and Flash Imprint Lithography for sub-100 nm Patterning.", Proceedings of SPIE, January 1, 2000, Vol. 3997, pp. 453 – 457.	

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P/L	B380	COLBURN et al., "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning.", Proc of SPIE, Vol. 3676.	
	B381	COWIE, "Polymers: Chemistry and Physics of Modern Materials.", 2 <sup>nd</sup> Ed., January 1, 1991, pp. 408-409	
	B382	ELDADA et al., "Advanced Polymer Systems for Optoelectronic Integrated Circuit Applications.", SPIE, January 1, 1997, Vol. 3006, pp. 344 - 361.	
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	B384	ELDADA et al., "Robust Photopolymers for MCM, Board, and Backplane Optical Interconnects.", SPIE, January 1, 1998, Vol. 3288, pp. 175 - 191.	
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	B386	FEYNMAN, "There's Plenty of Room at the Bottom." December 1959	
	B387	GOKAN et al., "Dry Etch Resistance of Organic Materials.", J. Electrochem. Soc.: SOLID-STATE SCIENCE AND TECHNOLOGY, January 1, 1983, pp. 143-146.	
	B388	GOLDFARB et al., "A Well-Behaved Revolute Flexure Joint for Compliant Mechanism Design.", ASME Journal of Mechanical Design, 09-01-1999, Vol. 121, No. 3, pp. 424-429	
	B389	GOLDFARB et al., "Compliant Micromanipulator Design for Scaled Bilateral Telemanipulation of Small-Scale Environments.", ASME International Mechanical Engineering Conference and Exposition, November 1, 1998, DSC-Vol. 64, pp. 213-218.	
2K	B390	HAISMA et al., "Mold-assisted Nanolithography: A Process for Reliable Pattern Replication.", J. Vac. Sci. Technol. B, November 1, 1996, pp. 4124-4128.	

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	B391	HASHIMOTO et al., "Design and Characteristics of a Parallel Link Compliant Wrist." IEEE, May 1, 1994, Department of Mechanical Engineering, Kagoshima University, pp. 2457-2462.	
	B392	HEIDARI, "Nanoimprint Lithography at the 6 in. Wafer Scale.", J. Vac. Sci. Technol. B 18 (6), November 1, 2000, pp. 3557 - 3560.	
	B393	HEXAPODS, "G1000-PS Power Series", <a href="http://www.hexapods.com">www.hexapods.com</a> , 10/12/1999	
	B394	HEXEL CORPORATION, "Tornado 2000 System Specifications.", <a href="http://www.hexel.com">www.hexel.com</a> , November 12, 1999.	
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	B396	HIRAI et al., "Mold Surface Treatment for Imprint Lithography.", Journal of Photopolymer Science and Technology, August 1, 2001, Vol. 14, No. 3, pp. 457-462.	
	B397	HOGAN et al., "Impedance Control: An Approach to Manipulation: Part 1- Theory.", Journal of Dynamic Systems, Measurement, and Control, March 1, 1985, Vol. 107, pp. 1-7.	
	B398	HOLLIS et al., "A Six-Degree-of-Freedom Magnetically Levitated Variable Compliance Fine-Motion Wrist: Design, Modeling, and Control.", IEEE Transactions on Robotics and Automation, June 1, 1991, Vol 7., No. 3, pp. 320 - 332.	
	B399	HOWELL et al., "A Loop-Closure Theory for the Analysis and Synthesis of Compliant Mechanisms.", Journal of Mechanical Design, March 1, 1996, Vol. 118, pp. 121-125.	
	B400	HU et al., "Fluorescence Probe Techniques (FPT) for Measuring the Relative Efficiencies of Free-Radical Photoinitiators.", Macromolecules, May 29, 1998, 31, pp. 4107-4113.	
	B401	International Search Report for PCT/US 00/30041, October 18, 2001.	

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PK	B402	International Search Report for PCT/US 01/26049, February 19, 2002	
	B403	JOHNSON et al., "Advances in Step and Flash Imprint Lithography.", SPIE Microlithography Conference, February 23, 2003.	
	B404	KANETOMO et al., "Robot for Use in Ultrahigh Vacuum.", Solid State Technology, August 1, 1997, pp. 63-72.	
	B405	KIM et al., "High-precision Magnetic Levitation Stage for Photolithography.", Precision Engineering, April 1, 1998, Vol 22., No. 2, pp. 66 - 77.	
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	B407	KOSEKI, "Design and Accuracy Evaluation of High-Speed and High Precision Parallel Mechanism.", Proc. Of IEEE, January 1, 1998, Intl. Conf. on Robotics & Automation, pp. 1340-1345.	
	B408	KOTACHI et al., "Si-Containing Positive Resist for ArF Excimer Laser Lithography.", Photopolymer Science and Technology, November 4, 1995, pp. 615 - 622.	
	B409	KRAUSS et al., "Fabrication of Nanodevices Using Sub-25 nm Imprint Lithography.", Appl. Phys. Lett., January 1, 1995, 67 (21), pp. 3114-3116.	
	B410	KRUG et al., "Fine Patterning of Thin Sol-gel Films.", Journal of Non-Crystalline Solids, January 1, 1992, 147 & 148, pp. 447-450.	
	B411	KUMAR et al., "Features of Gold Having Micrometer to Centimeter Dimensions can be Formed Through a Combination of Stamping with an Elastomeric Stamp and an Alkanethiol "ink" followed by Chemical Etching.", Applied Physics Letters, October 4, 1993, Vol. 63, Issue 14, pp. 2002-2004.	
PK	B412	LEE et al., "An Ultraprecision Stage for Alignment of Wafers in Advanced Microlithography.", Precision Engineering, September 1, 1997, pp. 113-122.	

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P/K	B413	LEE et al., "Ultra Precision Positioning System for Servo Motor-piezo Actuator Using the Dual Servo Loop and Digital filter Implementation.", American Society for Precision Engineering, January 1, 1998, pp. 287-290.	
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	B417	MANSKY et al., "Large-Area Domain Alignment in Block Copolymer Thin Films Using Electric Fields.", Macromolecules, June 9, 1998, Vol. 31, No. 13, pp. 4399-4401.	
	B418	MARTIN et al., "Predication of Fabrication Distortions in Step and Flash Imprint Lithography Templates.", Journal of Vacuum Science. B 20(6) pp. 2891-2895, November 1, 2002.	
	B419	MERLET, "Parallel Manipulators: State of the Art and Perspectives.", Advanced Robotics, January 1, 1994, Vol. 8, pp. 589-596.	
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	B422	MITTAL, "Precision Motion Control of a Magnetic Suspension Actuator Using a Robust Nonlinear Compensation Scheme.", IEEE/ASME Transactions on Mechatronics., December 1, 1997, Vol. 2., No. 4, pp. 268-280.	
P/K	B423	NERAC.COM Retro Search, "Imprint Lithography." October 16, 2004.	

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Ph ↓	B424	NERAC.COM Retro Search, "Multi-Layer Resists.", September 2, 2004.	
	B425	NERAC.COM Retro Search, "Reduction of Dimension of Contact Holes.", August 31, 2004.	
	B426	NERAC.COM Retro Search, "Trim Etching of Features Formed on an Organic Layer.", September 2, 2004.	
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Substitute for form 1449B/PTO			<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Application Number</b>	10/670,980	
			<b>Filing Date</b>	09/25/2003	
			<b>First Named Inventor</b>	Sreenivasan et al.	
			<b>Group Art Unit</b>	1722	
			<b>Examiner Name</b>	Nguyen, Thukhanh	
<b>Sheet</b>	20	<b>of</b>	23	<b>Attorney Docket Number</b>	P100-42-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
PK	B435	PHYSIK INSTRUMENTS, "Hexapod Six-Axis Parallel Kinematics Robot", Nano Positioning, January 1, 1998, pp. 8.4 – 8.5.	
PK	B436	PHYSIK INSTRUMENTS, "NanoPositioning, MicroPositioning, Piezo Technology.", PI Online Catalog, January 1, 1999, www.physikinstruments.com.	
	B437	<del>PHYSIK INSTRUMENTS, "Product Catalog for Micropositioning", 1997</del> <i>NOT CONSIDERED see app resp filed 7/21/05</i>	
PK	B438	RAIBERT et al., "Hybrid Position/Force Control of Manipulators.", Journal of Dynamic Systems, Measurement, and Control, June 1, 1981, Vol. 102, pp. 126 – 133.	
	B439	RONG et al., "Design and Analysis of Flexure-Hinge Mechanism Used in Micro-Positioning Stages.", ASME, January 1, 1994, Vol. 2, pp. 979-985.	
	B440	RONG et al., "Dynamics of Parallel Mechanism with Direct Compliance Control.", IEEE, January 1, 1997, pp. 1753-1758.	
	B441	ROOS et al., "Abstract of Nanoimprint Lithography with a Commercial 4 Inch Bond System for Hot Embossing", Proceedings of SPIE, October 1, 2001, Vol. 4343, pp. 427-435	
	B442	ROOS et al., "Nanoimprint Lithography with a Commercial 4 Inch Bond System for Hot Embossing.", Proceedings of SPIE, October 1, 2001, Vol. 4343, pp. 427-435.	
	B443	RUCHHOEFT et al., "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography.", Journal of Vacuum Science and Technology, pp. 1-17, 11/12/1999	
	B444	SAGIV, "Organized Monolayers by Absorption. 1. Formation and Structure of Oleophobic Mixed Monolayers on Solid Surfaces.", Journal of American Chemical Society/102:1, January 2, 1980.	
PK	B445	SCHEER et al., "Problems of the Nanoimprinting Technique for Nanometer Scale Pattern Definition.", J. Vac. Sci. Techno. B., November 1, 1998, pp. 3917-3921.	

<b>Examiner Signature</b>	<i>PK B. K.</i>	<b>Date Considered</b>	4/16/08
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				<b>First Named Inventor</b>	Sreenivasan et al.
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				<b>Examiner Name</b>	Nguyen, Thukhanh
<b>Sheet</b>	21	of	23	<b>Attorney Docket Number</b>	P100-42-03

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PK	B446	SLOCUM, "Precision Machine Design: Macromachine Design Philosophy and Its Applicability to the Design of Micromachines.", Micro Electro Mechanical Systems, February 4, 1992.	
	B447	SOWAH, "Diamond Used to Break the Mould [online].", [Retrieved on Sept. 2, 2003.] Retried from the Internet: <URL: http: HTTP://eetuk.com/showArticle.jhtml?articleID=19203691>, 9/18/02.	
	B448	SRINIVASAN et al., "Alkyltrichlorosilane-Based Self-Assembled Monolayer Films for Stiction Reduction in Silicon Micromachines.", Journal of Microelectromechanical Systems, June 1, 1998, Vol. 7, No. 2, p. 252-260.	
	B449	STEWART, "A Platform With Six Degrees of Freedom.", Proc Instn Mech Engrs, May 28, 1965, Vol 180, Pt1, No. 15, pp. 371-378.	
	B450	STIX, "Getting More from Moores", Scientific American, 4/2001.	
	B451	TAJBAKHSH et al., "Three-Degree-of-Freedom Optic Mount for Extreme Ultraviolet.", American Society for Precision Engineering, January 1, 1998, pp. 359-362.	
	B452	TANIKAWA et al., "Development of Small-sized 3 DOF Finger Module in Micro Hand for Micro Manipulation.", Proc. of IEEE, March 1, 1999, Intl. conf. on Intelligent Robots and Systems, pp. 876-881.	
	B453	TOMITA et al., "A 6-axes Motion Control Method for Parallel-Linkage-Type Fine Motion Stage.", JSPE-58-04, pp. 118-124., 11/11/2002	
	B454	Translation of Japanese Patent 02-24848, January 26, 1990.	
	B455	Translation of Japanese Patent 02-92603, April 3, 1990.	
PK	B456	TRILOGY SYSTEMS, "Linear Motors 310.", www.trilogysystems.com, January 1, 2001.	

<b>Examiner Signature</b>	<i>PK</i>	<b>Date Considered</b>	4/16/05
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Application Number</b>	10/670,980	
			<b>Filing Date</b>	09/25/2003	
			<b>First Named Inventor</b>	Sreenivasan et al.	
			<b>Group Art Unit</b>	1722	
			<b>Examiner Name</b>	Nguyen, Thukhanh	
<b>Sheet</b>	22	of	23	<b>Attorney Docket Number</b>	P100-42-03

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2/1	B457	UCHIDA et al., "A Mask-to-Wafer Alignment and Gap Setting Method for X-ray Lithography Using Graftings.", Journal Vacuum Science Technology, November 1, 1991, B 9 (6), pp. 3202-3206.	
	B458	US Application No. 09/698,317, Filed 10-27-2000, CHOI et al., "High Precision Orientation Alignment and Gap Control Stages for Imprint Lithography Processes."	
	B459	US Application No. 10/463,396, Filed 06-17-2003, CHOI et al., "Method to Reduce Adhesion Between a Conformable Region and a Pattern of a Mold."	
	B460	US Application No. 10/614,716, Filed 07-07-2003, SREENIVASAN et al., "A Conforming Template for Patterning Liquids Disposed on Substrates."	
	B461	US Application No. 10/687,519, Filed 10-16-2003, TRUSKETT et al., "Low Surface Energy Templates."	
	B462	US Application No. 10/687,562, Filed 10-16-03, CHERALA et al., "Applying Imprinting Material to Substrates Employing Electromagnetic Fields."	
	B463	US Application No. 10/760,821, Filed 01-20-2004, SREENIVASAN et al., "Method for Concurrently Employing Differing Materials to Form a Substrate."	
	B464	US Application No. 10/785,248, Filed 02-24-2004, CHOI et al., "A Method to Control the Relative Position Between a Body and a Surface."	
	B465	US Application No. 10/788,700, Filed 02-27-2004, SREENIVASAN et al., "Full-Wafer or Large Area Imprinting with Multiple Separated Sub-Fields for High Throughput Lithography."	
2/1	B466	US Application No. 10/864,214, Filed 6-9-04, SREENIVASAN et al., "An Imprint Lithography System to Produce a Light to Impinge upon and Polymerize a Liquid in Superimposition with Template Overlay Marks."	
	B467	Not considered see app resp filed 7/21/05 US Application No. 60/304,458, Filed 07-08-2002, SREENIVASAN et al., "Method and Apparatus for Whole Wafer Planarization using Optical Flats and Light Curable Liquids."	

Examiner Signature	<i>Pat B. R.</i>	Date Considered	4/16/05
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)			<b>Application Number</b>	10/670,980	
			<b>Filing Date</b>	09/25/2003	
			<b>First Named Inventor</b>	Sreenivasan et al.	
			<b>Group Art Unit</b>	1722	
			<b>Examiner Name</b>	Nguyen, Thukhanh	
<b>Sheet</b>	23	of	23	<b>Attorney Docket Number</b>	P100-42-03

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	B468	US Applications No. 10/616,294, Filed 07-09-2003, CHOI et al., "Systems for Magnification and Distortion Correction for Imprint Lithography Processes."	
	B469	VANDERBILT, "VU9730 Specifications for Improved Flexure Device.", Vanderbilt University Office of Transfer Technology, 101, 25, 192-199, 01/01/2003.	
	B470	WANG et al., "Passive Compliance versus Active Compliance in Robot-Based Automated Assembly Systems.", Industrial Robot, January 1, 1998, Vol. 25, No. 1, pp. 48-57.	
	B471	WHITE et al., "Novel Alignment System for Imprint Lithography.", J. Vac. Sci. Technol. B 18(6), November 1, 2000, pp. 3552-3556.	
	B472	WILLIAMS et al., "Six Degree of Freedom Mag-Lev Stage Development.", SPIE, January 1, 1997, Vol. 3051, pp. 856-867.	
	B473	WU, "Large Area High Density Quantized Magnetic Disks Fabricated Using Nanoimprint Lithography.", J. Vac. Sci. Technol., November 1, 1998, B 16(6), pp. 3825-3829.	
	B474	XIA et al., "Soft Lithography.", Angew. Chem. Int. Ed., January 1, 1998, pp. 551-575.	
	B475	XIA et al., "Soft Lithography.", Annu Rev. Mater. Sci., 1998, 28: 153-184.	

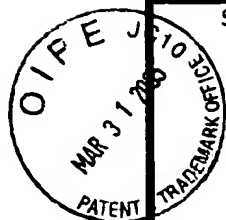
<b>Examiner Signature</b>		<b>Date Considered</b>	4/16/05
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet 1 of 5

**Complete if Known**

<b>APPLICATION NUMBER</b>	10/670,980
<b>FILING DATE</b>	09/25/2003
<b>FIRST NAMED INVENTOR</b>	Sreenivasan et al.
<b>Group Art Unit</b>	1722
<b>Examiner Name</b>	Nguyen, Thukhanh T.
<b>Attorney Docket Number</b>	P100-42-03

**U.S. PATENT DOCUMENTS**

Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
PLC	C1	6,517,977	B2	Resnick et al.	2/11/2003	
	C2	2002/0177319	A1	Chou	11/28/2002	
	C3	6,518,189	B1	Chou	2/11/2003	
	C4	6,828,244	B2	Chou	12/7/2004	
	C5	5,737,064		Inoue et al.	4/7/1998	
	C6	2004/0197843	A1	Chou et al.	10/7/2004	
	C7	2004/0156108	A1	Chou et al.	8/12/2004	
	C8	2004/0137734	A1	Chou et al.	7/15/2004	
	C9	2004/0131718	A1	Chou et al.	7/8/2004	
	C10	2004/0118809	A1	Chou et al.	6/24/2004	
	C11	2004/0046288	A1	Chou	3/11/2004	
	C12	2003/0080472	A1	Chou	5/1/2003	
	C13	2003/0034329	A1	Chou	2/20/2003	
	C14	2002/0042027	A1	Chou et al.	4/11/2002	
	C15	6,636,311	B1	Ina et al.	10/21/2003	
	C16	6,383,888	B1	Stirton	5/7/2002	
	C17	2004/0033515	A1	Cao et al.	2/19/2004	
	C18	10/666,527		Bailey et al.	9/18/2003	See. app resp 7/21/05

Examiner  
Signature

Date  
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4/16/05

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/670,980
				<b>FILING DATE</b>	09/25/2003
				<b>FIRST NAMED INVENTOR</b>	Sreenivasan et al.
				<b>Group Art Unit</b>	1722
				<b>Examiner Name</b>	Nguyen, Thukhanh T.
<b>Sheet</b>	2	of	5	<b>Attorney Docket Number</b>	P100-42-03

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PK	C19	5,999,245		Suzuki	12/7/1999	
	C20	6,630,410	B2	Trapp et al.	10/7/2003	
	C21	6,580,172	B2	Mancini et al.	6/17/2003	
	C22	4,722,878		Watakabe et al.	2/2/1988	
PK	C23	2002/0175298	A1	Moniwa et al.	11/28/2002	
	C24	10/706,537		Sreenivasan et al.	11/12/2003	NOT CONSIDERED
	C25	10/833,240		Watts et al.	4/27/2004	
	C26	10/895,214		Voison	7/20/2004	SEE App Resp Filed 7/21/05
	C27	10/917,761		McMackin et al.	8/13/2004	
	C28	11/051,941		McMackin et al.	2/4/2005	
	C29	11/000,321		Nimmakayala et al.	11/30/2004	
PK	C30	4,512,848		Deckman et al.	4/23/1985	
	C31	6,388,755	B1	Zhao	5/14/2002	
	C32	6,295,120	B1	Miyatake	9/25/2001	
	C33	6,049,373		Miyatake	4/11/2000	
	C34	6,285,439	B1	Miyatake	9/4/2001	
	C35	6,791,669	B2	Poon	9/14/2004	
PK	C36	6,517,995	B1	Jacobson et al.	2/11/2003	

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Sheet      3      of      5		<b>APPLICATION NUMBER</b> 10/670,980		<b>FILING DATE</b> 09/25/2003	
		<b>FIRST NAMED INVENTOR</b> Sreenivasan et al.		<b>Group Art Unit</b> 1722	
		<b>Examiner Name</b> Nguyen, Thukhanh T.		<b>Attorney Docket Number</b> P100-42-03	

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		Number	Kind Code <sup>2</sup> (if known)			

712	C37	2001/0023042	A1	Dirksen et al.	9/20/2001	
	C38	2004/0110856	A1	Young et al.	6/10/2004	
	C39	6,716,754	B2	Hofmann et al.	4/6/2004	
	C40	2002/0135099	A1	Robinson et al.	9/26/2002	
	C41	5,028,366		Harakal et al.	7/2/1991	
	C42	5,601,641		Stephens	2/11/1997	
	C43	5,849,209		Kindt-Larsen et al.	12/15/1998	
	C44	5,849,222		Jen et al.	12/15/1998	

Examiner Signature		Date Considered	4/16/08
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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/670,980
				<b>FILING DATE</b>	09/25/2003
				<b>FIRST NAMED INVENTOR</b>	Sreenivasan et al.
				<b>Group Art Unit</b>	1722
				<b>Examiner Name</b>	Nguyen, Thukhanh T.
<b>Attorney Docket Number</b>	P100-42-03				
Sheet	4	of	5		

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	†
		Office 2	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

PR	C45	WO	02/07199		Chou	1/24/2002		
	C46	WO	2004/114016		Chou et al.	12/29/2004		
	C47	WO	99/05724		Chou et al.	2/4/1999		
	C48	WO	03/010289		Chou et al.	2/6/2003		
	C49	WO	03/079416		Chou	9/25/2003		
PR	C50	WO	03/099536		Chou et al.	12/4/2003		

Examiner Signature	<i>Pat B. K...</i>	Date Considered	4/16/05
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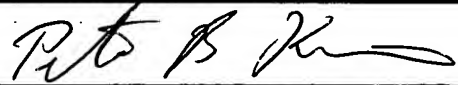
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/670,980
				<b>FILING DATE</b>	09/25/2003
				<b>FIRST NAMED INVENTOR</b>	Sreenivasan et al.
				Group Art Unit	1722
Sheet	5	of	5	Examiner Name	Nguyen, Thukhanh T.
				Attorney Docket Number	P100-42-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

PK	C51	Chou et al., Nanoimprint Lithography, Journal of Vacuum Science Technolgy B 14(16), pp. 4129-4133, 11/1/1996	
	C52	Colburn et al., Development and Advantages of Step-and-Flash Lithography, Solid State Technology, 7/1/2001	
	C53	Resnick et al., High Resolution Templates for Step and Flash Imprint Lithography, Journal of Microlithography, Microfabrication, and Microsystems. Vol 1. No. 3., 10/1/2002	
	C54	Colburn et al., Characterization and Modeling of Volumetric and Mechanical Properties for Step and Flash Imprint Lithography Photopolymers, Journal of Vacuum Science Technology. Vol b. 19(6), 11/1/2001	
	C55	Bailey et al., Step and Flash Imprint Lithography: Defect Analysis, Journal of Vacuum Science, B 19(6), pp. 2806-2810, 11/1/2001	
	C56	Bailey et al., Step and Flash Imprint Lithography: Template Surface Treatment and Defect Analysis, Journal of Vacuum Science, B 18(6), pp. 3572-3577, 11/1/2000	
	C57	Wronosky et al., Wafer and Reticle Positioning System for the Extreme Ultraviolet Lithography Engineering Test Stand, Emerging Lithography Technologies, Proceedings of SPIE Vol. 3997, pp. 829-839, 7/1/2000	
PK	C58	Schneider et al., Stripes of Partially Fluorinated Alkyl Chains: Dipolar Langmuir Monolayers	

Examiner Signature		Date Considered	4/16/05
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Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				APPLICATION NUMBER	10/670,980
				FILING DATE	09/25/2003
				FIRST NAMED INVENTOR	Sreenivasan et al.
				Group Art Unit	2851
				Examiner Name	Kim, Peter B.
				Attorney Docket Number	P100-42-03
Sheet	1	of	3		

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
PK	D1	6,665,119		Kurtz et al.	12/16/2003	
	D2	6,842,229		Sreenivasan et al.	1/11/2005	
	D3	6,190,929		Wang et al.	2/20/2001	
	D4	6,049,373		Miyatake	4/11/2000	
	D5	2005/0061698		Sreenivasan et al.	3/10/2005	
	D6	2005/0064344		Bailey et al.	3/24/2005	
	D7	2005/0084804		Truskett et al.	4/21/2005	
	D8	2005/0098534		Sreenivasan et al.	5/12/2005	
↓	D9	6,902,853		Sreenivasan et al.	6/7/2005	
PK	D10	6,890,688		Mancini et al.	5/10/2005	

Examiner Signature	<i>PK JB K</i>	Date Considered	8/29/05
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				FILING DATE	09/25/2003
				FIRST NAMED INVENTOR	Sreenivasan et al.
				Group Art Unit	2851
				Examiner Name	Kim, Peter B.
				Attorney Docket Number	P100-42-03
Sheet	2	of	3		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Citation No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

PK	D11	SHIBUICHI ET AL., Super Water- and Oil-Repellent Surfaces Resulting from Fractal Structure, Journal of Colloid and Interface Science, Vol. 208, no. 1, pp. 287-294 12/1/1998	
	D12	APPLICATION NO. 10/833,240, naming Inventors Watts et al., entitled Compliant Template for UV Imprinting, filed 4/27/2004	
	D13	APPLICATION NO. 10/895,214, naming Inventors Volson, entitled Imprint Alignment Method, System, and Template, filed 7/20/2004	
	D14	APPLICATION NO. 10/917,761, naming Inventors McMackin et al., entitled A Moat System for an Imprint Lithography Template, filed 8/13/2004	
	D15	APPLICATION NO. 11/051,941, naming Inventors McMackin et al., entitled Imprint Lithography Template to Facilitate Control of Liquid Movement, filed 2/4/2005	
	D16	APPLICATION NO. 11/000,321, naming Inventors Nimmakayala et al., entitled Interferometric Analysis Method for the Manufacture of Nano-Scale Devices, filed 11/30/2004	
	D17	PARK ET AL., Aligning Liquid Crystals Using Replicated Nanopatterns, PSI Scientific Report 2002, Vol VII, p. 85 3/1/2003	
	D18	TANIGUCHI ET AL., Diamond Nanoimprint Lithography, Nanotechnology, 2002, vol. 13, no. 5, pp. 592-596(5) 1/1/2002	
PK	D19	KIYOHARA ET AL., Abstract of Plasma Etching of CVD Diamond Films using an ECR-type Oxygen Source, <a href="http://www.iop.org/EJ/abstract/0957-4484/10/4/304">http://www.iop.org/EJ/abstract/0957-4484/10/4/304</a> 9/26/2003	

Examiner Signature	<i>Peter B. Kim</i>	Date Considered	8/29/05
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				APPLICATION NUMBER	10/670,980
				FILING DATE	09/25/2003
				FIRST NAMED INVENTOR	Sreenivasan et al.
				Group Art Unit	2851
				Examiner Name	Kim, Peter B.
				Attorney Docket Number	P100-42-03
Sheet	3	of	3		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

gh	D20	APPLICATION NO. 11/136,897, naming inventors Miller et al., entitled Imprint Lithography Template Having a Coating to Reflect and/or Absorb Actinic Energy, filed 5/25/2005	

Examiner Signature	<i>Peter B. Kim</i>	Date Considered	8/29/05.
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## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18

Stylesheet Version v18.0

Title of Invention	IMPRINT LITHOGRAPHY TEMPLATE HAVING OPAQUE ALIGNMENT MARKS						
<div>Application Number : 10/670980 </div> <div>Confirmation Number: 8096</div> <div>First Named Applicant: Sidigata Sreenivasan</div> <div>Attorney Docket Number: P100-42-03</div> <div>Art Unit: 1722</div> <div>Examiner: Thukhanh T Nguyen</div> <div>Search string: ( 5737064 ).pn</div>							
<b>US Patent Documents</b> <i>COPY</i>							
<b>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</b>							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
	1	5737064	1998-04-07	Inoue et al.			
<b>Signature</b>							
Examiner Name				Date			